

INDUSTRIALIZATION, THE NEW ECONOMY, AND THE OCCUPATIONAL WORK ETHIC

Gregory C. Petty, Ph.D.
University of Tennessee

Index: Occupational Work Ethic, e-learning, Vocational Teacher Preparation

Abstract: The entrepreneurial spirit is alive and well in the new international economy. The information age, the internet, along with e-commerce, e-communication, and e-learning are changing the way businesses and workers interact, communicate and problem solve. The challenges of these multitude of demands on today's workers has greatly altered our traditional knowledge of the world of work. Vocational educators and trainers worldwide are now faced with a myriad of training challenges. Perhaps the most salient challenge is the understanding and communicating (teaching) of a work ethic suitable for the workplace of this new age.

INTRODUCTION

The Internet so commonly used today, began as the ARPANET during the cold war in 1969. It was developed by the U.S. Department of Defense's in conjunction with a number of military contractors and universities to explore the possibility of a communication network that could survive a nuclear attack. It continued simply because the DOD, it's contractors, and the universities found that it provided a very convenient way to communicate. (The Internet Economy Indicators,2000).

Today few would argue that the Internet is changing every aspect of our lives, how we work, live, play and learn. In fact, the Internet is emerging as a major force behind the strongest U.S. economy in history. A recent study by the University of Texas showed that the Internet economy grew to \$523.9 billion in 1999, and now directly supports nearly 2.5 million workers, more than the insurance, communications and public utilities industries. Internet economy companies grew at an annual rate of 11 percent from 1998 to 1999, nearly three times the growth rate of the economy as a whole for the same period. The Internet economy is impacting businesses and governments on a global scale. Business leaders recognize the strategic role that the Internet plays in their company's ability to survive and compete into the next century.

Government leaders world wide, increasingly understand that the Internet will shape the future of their economic welfare and the welfare of their citizens. The Internet is driving a global economy that is creating unprecedented opportunities for countries, companies and individuals around the world. This past year, 17 Million US households were shopping online, with online retail sales expected to top USD \$20.2 billion, and 56 percent of U.S. companies will sell their products online by 2000, up from 24 percent in 1998 (NUA/Forrester Research, 2000). Mediamark Research Inc. has released data which suggests that there are 64.2 million adults going online in the U.S. every month. (NUA,2000). The NEC Research Institute reports that there are currently 800 million pages on the web. A survey of 30,000 consumers in 30 nations found that the U.S. not only has the fastest-growing number of Internet users, but the largest proportion of e-commerce consumers. (Roper Starch Worldwide, 2000).

More than a million new jobs were created by the U.S. high-tech industry since 1993. (American Electronics Association) and this summer 82 percent of college graduates will search for careers and employment information online (NUA, 2000). Preliminary employment data show that the U.S. high-tech industry employed 4.8 million workers in 1998, making it one of the nation's largest industries (U.S. Bureau of Labor Statistics, 1999). Information technology sectors are growing at double the rate of the overall economy and have jumped as a share of the economy from 6.4% in 1993 to 8.2% in 1998. High-tech has driven more than a quarter of all economic growth since 1993. In 1965, high-tech's share of business spending was 3%. In 1996, it was 45%. In 1996, 7.4 million people worked in high-tech jobs, earning an average salary of \$46,000, more than fifty percent more than the average wage of \$28,000. (U.S. Department of Commerce, 1999).

Internet Usage WorldWide

In North America and Europe, 1 in 6 people use the Internet. (NUA, 2000). The number of women using the Internet worldwide will pass 96 million, or 45 percent of the world's Internet users in 2001. (Computer Economics, 2000). In 1993, there were 26,000 domain names in use. In 1999, there are 5 million web sites. (U.S. Department of Commerce/Netcraft, 2000). In 1993, 3 million people were connected to the Internet. In 1999, 80 million Americans are connected and approximately 200 million people worldwide. (U.S. Department of Commerce, 1999). 364 million PCs were in use in 1998. (Computer Almanac Industry, 2000). Today, over 50% of the online community originates from outside the US. (IDC, 2000). By 2005, non-US Web users are forecast to comprise 700 million of the total one billion users. (NUA, 2000).

The global e-commerce market is expected to reach \$1.2 trillion by 2001. (Global Sight Corporation, 2000). In India, there is an immediate demand for 500,000 additional Internet connections and in Europe, 47 million households are expected to have Internet access by 2003. There will be over 24.3 million Internet users in Latin America by 2003. (NUA, 2000)

Changes in Vocational Teacher Preparation: During the past twenty years America entered the "post-Fordist" economy. This change in economic conditions created a blurring of traditional distinctions between mental and manual occupations and between academic and vocational education (Sharp, 1996). Sharp asserts that vocational teacher education must be changed so future teachers can develop a new core work force with the technical and interpersonal skills (work ethic) required for a less hierarchical workplace. Gregson (1993) supports this thought and contends that vocational teacher educators must learn to produce teachers capable of transforming their students into the critical thinkers and problem solvers needed to make workplaces more democratic and emancipatory. Miller (1996) claims the mission of vocational education (and thus vocational teacher education) should be based on the principles of constructivism. The cognitive approach should emphasize "constructing" knowledge through a problem-solving process designed to produce "learners who are problem solvers, lifelong learners, makers of meaning, collaborators, change agents who are also able to change, and practitioners of democratic processes"(p. 69).

Over 25 concepts/measures of worker commitment (work ethic) have been generated by researchers since 1956 (Morrow, 1983), some of these measures are: (1) the protestant work ethic (the belief that hard work is intrinsically good and an end in itself; Mirels and Garrett, 1971); (2) career salience (the importance of work and a career in one's total life; Greenhaus, 1971); (3) job involvement (the degree of daily absorption an individual experiences in work activity; Lodahl and Kejner, 1965); (4) work as a central life interest (an individual's preferred locale for carrying out

activities; Dubin, 1956); Taveggia and Ziemba, 1978); and (5) organizational commitment (the extent to which an employee desires to remain in an organization, exerts effort on its behalf, and believes in an accepts the organization's values and goals (Mowday, Porter, & Steers, 1979

Lankard (1995) citing the work of others states that Generation X, the population cohort following the Baby Boomers, do not have a poor work ethic - they just view the concept of career differently. A Swedish study on the work attitudes of young people supported this finding. Young people possess internal or postmaterialistic values in addition to more traditional values associated with work. Girls ranked higher on intrinsic work goals than economic ones (Hagstrom & Gamberale, 1995). Many studies on work attitudes or values of young people cite degrees of dissatisfaction with their "work attitude" (Capelli & Iannozzi, 1995). The perception that there is a problem with the work ethic of younger workers, and that more effort should be made to teach work values was found to be held by employers (Florida State Department of Education, 1991; Donsky, A., & Others (1994); Ford & Herren, 1993; Cappelli & Iannozzi, 1995), teachers (Gregson & Bettis, 1991), parents and principals (National PTA, 1992), and government (Nierdergang, 1992; National Council on Vocational Education, 1991). A review of the literature revealed the greatest effort being made to teach work values is being undertaken by vocational education.

Teaching Work Ethic: Regarding the teaching of work ethic values, Ford & Herren (1995) in a survey of 160 work program coordinators in Georgia, found that coordinators felt that the teaching of work ethics in their classrooms was largely informal or unintentional. Cherrington (1980), in discussing the teaching of work ethics values, stated that indoctrinational strategies are commonly used. However, Gregson & Bettis (1991) through a series of interviews with trade and industrial instructors across Virginia, did not find evidence to support the contention that vocational instructors use primarily indoctrinational strategies to teach work values and attitudes. Although reward structure and role modeling were used extensively, more democratic strategies, such a group discussion, on-on-one counseling, and role-playing were also frequently used.

International Work Ethic: Two studies were found which investigated differences of culture among countries regarding work ethic values. Another study sought commonalties. One study examined country group differences in economic beliefs and attitudes (Furnham, Kirkcaldy, and Lynn, 1994). Nearly 12,000 students from 41 countries completed questionnaires measuring 7 traits: work ethic, achievement motivation, mastery, competitiveness, and achievement through conformity, money beliefs, and attitudes to saving. The authors found that countries from North and South America scored highest on work ethic and mastery while young people in Far and Middle Eastern countries reported the highest competitiveness and acquisitiveness for money. Another study specifically measured and compared Protestant Work Ethic scores in 13 countries, utilizing 7 work ethic scales with varying reliabilities and validities (Furnham, Bond, Heaven, and Hilton, 1993). There was a highly significant difference between the scale scores of the subjects from the different countries, and the differences tended to be consistent for the disparate measures. Subjects from richer, First World countries tended to have lower scores than those from Third World countries. Also, the authors discovered a significant correlation between the most well known work ethic scale score and G. Hofstede's power-distance score, indicating that work ethic belief is associated with the amount of weight that is placed on prestige, power, and wealth in a society. Giorgi and Marsh (1990) reanalyzed data from a 1981 European values survey to (a) determine the existence of a consensual work ethic among modern industrial societies and, (b) examine the link between work ethic and religion. France, Italy, West Germany, the United Kingdom, Holland, Belgium, Denmark, and Spain comprised the country groups. These Western European cultures appeared to embrace similar values associated with work. Specifically, the authors discovered what

they called a “vocational work ethic”, which stresses the rewards of self-fulfillment and social obligation. This ethic, in turn, was linked with religious denomination and degree of religious fervor. Also, people who had more education had higher work ethic values.

Among the more recent instruments are Ray’s (1982) Eclectic Protestant Ethic, Ho’s (1984) Australian Work Ethic; Wayne’s (1984) Protestant Ethic and Contemporary Work Values; and Petty’s (1990) Occupational Work Ethic Inventory. The value and definition of what is generically called the work ethic has undergone a transformation from the foundations of the concept as it was originally conceived and applied during the agrarian and industrial periods of history. These instruments were developed in order to better match the conditions of the modern workplace and the exigencies of the modern worker in the information age.

Petty’s Occupational Work Ethic Inventory (OWEI)

Petty’s Occupational Work Ethic Inventory was developed and tested by Petty (1991a). As it is normally used, the OWEI instrument consists of three segments. The first segment introduces the instrument, provides instructions for the participant, and assures confidentiality. The second segment represents the scale of 50 items. And the third segment is generally attached in order to gather demographic information from the respondents. The **Occupational Work Ethic** is defined by Petty as: *the displayed behavioral characteristics (work habits, attitudes, and values) based on an individual’s personal values and mores while working for income within a paid occupation (versus sports, religious activities, hobbies and other avocations).*

Petty’s OWEI is based in part on the original work of Dr. H. C. Kazanas at the University of Missouri in 1977-1978. Dr. Kazanas’ (1978) empirical investigation was related to affective work competencies and work values, with an emphasis on how to measure them. Utilizing the affective work competencies phrase list extracted from a population of workers, supervisors, and vocational educators (Petty & Morgan, 1980), Petty then set out in 1990 to develop a new instrument which could use these terms to measure work ethic characteristics directly related to a person’s work. A panel of subject-matter experts was used to establish content validity through a form of semantic analysis, which entailed the categorization of simple one or two word descriptors into groups. Independent categorization and re-categorization took place until a consensus was reached (Petty, 1991a). The resulting clusters were labeled Dependable, Ambitious, Considerate, and Cooperative. A 1995 study by Petty gave four clusters: interpersonal skills, initiative, being dependable, and reversed items. An anchor or stem phrase of “At work, I can describe myself as:” was added to direct the participant to their responses. A Likert-type scale was provided for rating participant standards for each item: 1 = Never; 2 = Almost Never; 3 = Seldom; 4 = Sometimes; 5 = Usually; 6 = Almost Always; and 7 = Always. A pilot study was undertaken later in the year. A coefficient alpha estimate of internal consistency was computed to be .95 (Petty, 1991b). As a result of this pilot analysis, all 50 of the OWEI items were left intact. A pilot study by Hill (1993) of 135 college students and staff employed in a small four-year liberal arts college was conducted in order to check the internal validity of the OWEI instrument. A computed coefficient alpha was .94.

Since 1990, numerous studies have been undertaken in order to measure work ethic attitudes using the OWEI, or investigate issues related to the instrument’s validity. The following discussion focuses on issues pertaining to the validity of the instrument; a separate section will discuss research findings related to work ethic research in which the OWEI has been utilized. One of the first studies to utilize the OWEI instrument was undertaken by Hill (1993). The purpose of the study was to determine if there were significant differences in the work ethic of workers categorized by Standard Occupational Classification (SOC), level of education, age, gender, years of full-time

work experience, or empowerment. This study was unique in that it utilized respondents from randomly selected workplaces, covering a wide range of occupations, instead of the more commonly seen convenience samples. A multivariate analysis of variance procedure revealed significant differences in work ethic for all of the above groupings. Further analysis using a Fisher's protected LSD procedure was employed in order to determine precise differences for each of the independent variables. Differences for the four dimensions of the work ethic represented by the subscales of the OWEI were found for SOC, education, gender, work experience, and empowerment. The OWEI was found to be internally consistent and highly reliable, based on a computed coefficient alpha of .95.

A factor analysis was performed by Hill and Petty (1995) in order to identify key themes, which characterize the occupational work ethic and further refine the Occupational Work Ethic Inventory (OWEI). A principle-components analysis was performed; using squared multiple correlations yielded 4 factors, which met the Kaiser's criterion. A scree test was performed, and rendered a four-factor solution. Finally, orthogonal rotation using the Varimax procedure was employed, in order to minimize the number of loadings on a factor, which enabled the researcher to more easily interpret the resulting list of constructs produced via the factor matrix procedure.

The labeled factors were: **Interpersonal Skills** - comprised items which related to working relationships with other people and the general concept of cooperation; **Initiative** - incorporated items which dealt with the idea of ambition, "moving up the ladder", and adherence to a difficult job situation; **Being Dependable** - included items which had to do with fulfilling the (minimum) expectations of the employer for satisfactory job performance, including such things as punctuality and honesty; and lastly, **Reversed Items on the instrument** - This factor was made up items which were reversed and stated in the negative on the OWEI in order prevent participants from developing an unacceptable response pattern.

Research Studies Utilizing the Occupational Work Ethic Inventory

Hill (1993) undertook a study to determine if there were significant differences in the work ethic of workers categorized by Standard Occupational Classification (SOC), level of education, age, gender, years of full-time work experience, or empowerment. Among the more easily interpreted findings were those related to the level of education and gender groupings. The mean subscale scores of workers grouped by level of education increased sequentially for the subscale of *ambitious*. Significant differences were not found for the subscales of *dependable*, *considerate*, or *cooperative*. Level of education was partitioned as follows: group 1 - less than a high school diploma; group 2 - high school degree or GED; group 3 - two years of college or Associate's degree; group 4 - Bachelor's degree; group 5 - some graduate work. Females scored significantly higher than males on all four of OWEI subscales. Mixed findings for the variables of full-time work experience and empowerment do not appear to lend themselves to useful interpretation.

A study by Hatcher (1994) examined the work ethic of apprentices and instructors in a trade union apprenticeship-training program. The study revealed that there was a significant difference in work ethic for participants in the categories of occupation and job specialization. The author suggested that these differences might be due to the maturity of older instructors, more humanistic characteristics of younger apprentices, and the definitions of job specializations. A study by Petty & Hill (1994) explored the occupational work ethic of women and men. Women tended to be more heavily concentrated in occupations classified as technical, clerical, or sales and men were more evenly distributed across the SOC aggregate groups. The calculated results revealed that females

scored higher than males for every subscale (i.e. dependable, ambitious, considerate, and cooperative).

Petty and Hill (1994) stated that women exhibited a stronger work ethic than men did, which is consistent with findings of other researchers (Hall, 1990, 1991; Hill, 1993; Miller, 1980; Wayne, 1989). The research of Lyson (1984) and Miller (1980) was cited as evidence that women have different expectations from work. The importance of stressing these affective factors in the areas of teaching and vocational guidance, and especially the idea of helping students assimilate these factors are provided as important implications for this study.

A study by Hollingsworth (1995) examined the roles, together and separately, of leadership orientation and work ethic. It was discovered that the participant home economists emphasized the factors of (a) Dependability and (b) Interpersonal Skill, with the third factor of (c) Initiative being clearly distinguished as being the least important.

Petty published three studies in 1995 (1995a; 1995c; 1995d) that apparently used the same population/sample, but which focused on disparate demographics. The population for these studies consisted of workers from the mid-south region of the United States. From a master list of businesses and industries in the community, a sample of approximately 3600 possible participants was developed, utilizing a random block design, which included 200 industries. There were 2,232 observations used in the analysis due to no returns or missing values. The instrument used to gather data, the statistics used to analyze the data, and other incidentals of research were essentially the same as those used in the Petty & Hill (1994) study discussed earlier.

Through an examination of job titles, which comprised the sample, Petty (1995d), made the observation that the six SOC classification groupings roughly correspond to generally known teaching areas in industrial-technical teacher education. For the persons represented by this data set, the analysis reveals that self-rated work ethic does differ by occupation. Each teaching area group appeared to rate one or more of the dimensions of occupational work ethic as being more important; no one teaching group (SOC aggregate group) stressed all four dimensions equally. The primary implications of this study were stated to be the importance of teaching the proper attitudes that attend each occupational area, and the need for vocational guidance of students, that is, to better match student behaviors and attitudes with suitable occupational areas.

SUMMARY

A high-spirited work ethic is consistent with entrepreneurial success. The new international economy (complemented with the information age, the Internet, e-commerce, e-communication, and e learning) will require understanding and communicating (teaching) of a work ethic suitable for the workplace. The way businesses and workers interact, communicate and problem solve are creating new challenges for vocational educators and trainers worldwide. These new challenges have greatly altered our traditional knowledge of the world of work and our ability to teach the work ethic. This important ingredient to economic success must be further investigated and explored to develop better techniques for preparing tomorrow's workforce.

REFERENCES

- Cherrington, D. J. (1980), *The work ethic: Working values and values that work*. New York: AMACOM.
- Greenhaus, J. H. (1971). An investigation of the role of career salience in vocational behavior. *Journal of Vocational Behavior*, 1, 209-216.
- Gregson, J.A. (1993). "Critical Pedagogy for Vocational Education: The Role of Teacher Education." *Journal of Industrial Teacher Education* no. 4 (Summer): 7-28.
- Kazanas, H.C. (1978). *Affective work competencies for vocational education*. Columbia, MO: University of Missouri. (ERIC Document Reproduction Service No. EJ 075 733).
- Lodahl, T. M. & Kejner, M. (1965). The definition and measurement of job involvement. *Journal of Applied Psychology*, 49, 24-33.
- Miller, M.D. (1996). "Philosophy: The Conceptual Framework for Designing a System of Teacher Education." In BEYOND TRADITION, edited by N.K. Hartley and T.L. Wentling, pp. 53-72. Columbia: University Council for Vocational Education, University of Missouri. (ED 400 443)
- Mirels, H. L. & Garrett, J. B., (1971). The protestant work ethic as a personality variable. *Journal of Consulting and Clinical Psychology*, 36, 40-44.
- Morrow, P. C. (1983). Concept redundancy in organizational research: The case of work commitment. *Academy of Management Review*, 8, 486-500.
- Petty, G.C. (1979). Affective work competencies of workers, supervisors, and vocational educators. (Doctoral dissertation, University of Missouri-Columbia, 1978, 5992A.
- Petty, G. C. (1991a). *Development of the Occupational Work Ethic Inventory*. Unpublished manuscript, The University of Tennessee, Knoxville.
- Petty, G.C. (1991b, October). *Technology education and the work ethic: Teaching the forgotten competencies*. Paper presented to Southeastern Technology Education Conference, Blacksburg, VA.
- Petty, G.C. (1995a). Adults in the work force and the occupational work ethic. *Journal of Studies in Technical Careers*, 25(3), 133-140.
- Petty, G.C. (1995c). Education and the occupational work ethic. *SAEOPP Journal*, 14,(2), 1-13.
- Petty, G.C. (1995d). Vocational-technical education and the occupational work ethic. *Journal of Industrial Teacher Education*, 32(3), 45-58.
- Petty, G, & Hill, R. (1994). Are women and men different? A study of the occupational work ethic. *Journal of Vocational Education Research*, 19(1), 71-89.
- Petty, G.C. & Morgan, K.R. (1980). *Teaching strategies to facilitate students acquisition of affective work competencies* (Project No. 80-131-600-7). Columbia, MO: University of Missouri-Columbia,
- NUA/Forrester Research (2000). Nua Ltd. 400 Lafayette Street, Fifth Floor, New York City, NY
- Sharp, G. (1996). "Post-Fordism, the Vocational Curriculum and the Challenge to Teacher Preparation." *Journal of Vocational Education and Training* 48(1) 25-39.
- Taveggia, T. C. & Ziemba, T. (1978). Linkages to work: A study of the "central life interest" and "work attachments" of male and female workers. *Journal of Vocational Behavior*, 12, 303-320.
- The Internet Economy Indicators. (2000) 6/13. <http://www.internetindicators.com/facts.html>.